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Technology Adoption Decisions in Dairy Production and the Role of Herd Expansion

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"Technology Adoption Decisions in Dairy Production and the Role of Herd Expansion"

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The notion that technological change is a major determinant of structural change is perhaps most relevant to farms that specialize in dairy production. The expense of advanced "laborsaving" technologies, which could be afforded by larger operations, has also restrained "open" entry into dairy farming. In addition, technological change limited to milk production has also influenced specialization in dairy farming. As a result, fewer but larger farms now characterize the structure of U.S. milk production. Because of the structural implication of technological adoption, the analysis examines the determinants of adopting capital- and management-intense technologies, with special emphasis given to the role of herd expansion.

Study results identified age, size, and specialization in dairy production as important in increasing the likelihood of adopting a capital-intense technology. Education and size of operation positively influenced the decision to adopt a management-intense technology. Age, education, credit reserves, size, and increased use of hired labor positively influenced the decision to adopt a combined capital- and management-intense technology. Simulation results show that an increase in farm size will increase production by a larger proportion implying a scale-bias towards technology adoption.